




Leveraging Your Health Information Exchange for Emergency Preparedness







Introductions






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Agenda & Overview

- What is a Health Information Exchange?
- HIEs as a Vital Tool in a Crisis
 - Storms
 - Floods
- Crisis Support /Ransomware Attacks
- Life Emergencies: EMS Data
- COVID-19 Pandemic Response
- Protecting Downstream Partners
- Practice the Basics: Ransomware Mitigation
- How to incorporate HIEs into your disaster and emergency preparedness plans.
- Questions?

What is a Health Information Exchange?

A health information exchange (HIE) allows health professionals and/or patients appropriate access and capability to securely share patient's health information electronically.



Source: <https://www.healthit.gov/topic/health-it-basics/health-information-exchange>

Health Information Exchange Services

We provide electronic access and services for authorized users, care managers, and appropriate community-based organizations with secure, electronic access to health information:

- Lab reports, images, and radiology results
- Hospital discharge notifications with clinical reports
- Ambulatory care summaries
- Hospital admission/discharge notification
- Demographics, deceased notification, some SDOH
- Participation in health homes



A Little Bit of History...

- Digitization of billing and claims
- Care transitions still paper-generated
- Images shared by films/CDs
- Faxing and snail mail used as primary communication tools
- Minimal clinical data collected to support billing cost reduction & patient care
- Payers begin to review clinical data from claims to analyze quality of care



Health Information Exchanges

HIEs Across the Country

- Strategic Health Information Exchange Collaborative (SHIEC) is a national collaborative of 81 HIEs.
- SHIEC collectively serves 95% of the U.S. population.
<https://strategichie.com/about/>.

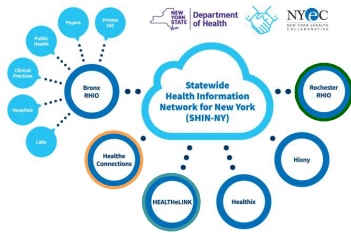
New York State (SHIN-NY)

- A Network of networks connects six regional HIEs allowing participating healthcare professionals, with patient consent, quick access to patient health information.
- The SHIN-NY is overseen by the New York State Department of Health and governed by privacy and security policies and standards.

More: <https://www.nyhealth.org/shin-ny/what-is-the-shin-ny/>



SHIN-NY The Network of Networks



More: <https://www.nyhealth.org/shin-ny/what-is-the-shin-ny/>



Introduction

Is your health information exchange incorporated in your emergency preparedness plans?



HIEs as a Vital Tool in a Crisis

HIEs are vital for connecting communities and ensuring patient medical records are available at all times. While interoperability remains a major issue for HIE implementation, HIE connectivity is becoming more prevalent across the country.

According to the 2019 American Hospital Association IT Supplement, there was roughly a 40 percent **increase** in the proportion of hospitals that leveraged a national network to find patient data between 2018 and 2019.

Hospitals commonly utilized state, regional, or local HIE to access patient data from outside providers. This percentage increased from 46 percent in 2018 to 53 percent in 2019.

Source: <https://www.healthcareitnews.com/resources/stages-of-health-information-exchange-implementation>



Storms: Monroe County

- In 2017, during a windstorm, a general family practice in Monroe County used Explore+ as a backup when their EHR was down
- Explore+ is a web-based service, so it can be used on mobile devices.
- In this case, the practice was able to use phones with cellular service as a stop gap measure to wrap their day.



ROCHESTER RHIO

Storms: Southern Tier

Two weather events occurred in the Southern Tier area in past years.

First Flood Event:

- Staff was stationed onsite at two disaster centers (Johnson City High School and Binghamton University).
- Staff trained users at the centers on using the HIE clinical portal to look up patients.
 - Usernames had a specific naming convention qualified by the event (e.g., Flood2015_xxx) to track usage and for auditing.
 - Users were provided with a "break the glass" security role that is used for emergency purposes when a patient's consent is not available.

Second Flood Event:

- Staff assisted in setting up the disaster center (Greater Binghamton Health Center) by providing laptops to access the HIE.
- Staff provided training and set up accounts for users.



Crisis Support

Ransomware Attacks



Crisis Support

Several ransomware attacks took place across New York State in 2020

- Facilities did not have access to their own patient data since systems were shut down; access to patient medical records from other facilities was hampered.
- The health information exchange became the access point for patient data; staff was deployed to facilities to train additional users to access their own (and community) patient data through the HIE.



Ransomware Case Study

Background

On an early Sunday morning in April 2017, a virus shut down the entire computer network of a Buffalo, NY-based hospital and Level 1 Adult Trauma Center. While the hospital's IT team immediately commenced a thorough assessment and analysis of the situation and worked to bring its system back online, staff was working to manually complete medical records, admit patients and refill prescriptions. HEALTHeLINK, Western New York's clinical information exchange, was contacted to see what assistance could be provided to the hospital in the interim.



Ransomware Case Study

HIE Response

Within hours of being contacted, HEALTHeLINK staff was on-site. Because the hospital was already a data source for the HIE prior to the outage, staff was able to securely access data from its own organization in addition to consented patient data from outside facilities. Prior to the network outage, providers were able to access HEALTHeLINK through a single sign on process via the hospital's electronic medical record. With the network down, users were forced to access from "down time" laptops deployed by the hospital's IT department. However, users needed to have their passwords reset and a two-factor authentication (TFA) method established to ensure patient health information was kept private and confidential.

Partnering with the hospital's IT department to coordinate and determine priorities, HEALTHeLINK staff spent the first 24 hours enabling access to emergency department providers. Over the next several days, HEALTHeLINK staff maintained a presence at the hospital to set up accounts, enable user access, and provide training and general support of access to data via HEALTHeLINK for other department providers and staff. A command center was also set up in the cafeteria where users, existing and new, could report to gain access to HEALTHeLINK.



Ransomware Case Study

Community access of ECMC data

Despite having no current ECMC data loaded to HEALTHeLINK since April 9, 2017, there is a 22% increase in the access of ECMC data by community providers. This is driven wholly by ECMC departments and clinics access of ECMC data through HEALTHeLINK. Without access to their own systems, and despite limited computers with internet access, ECMC users viewed more than seven times the ECMC records through HEALTHeLINK in April, than they had in any month previously, ever. This is a testament to the ability of a facility's user to access a patient's historical data through the HIE in the event of a system outage. Additionally, ECMC users viewed more than twice the patient records than they had in any month previously.

HEALTHeLINK Access by facility users

The usage of HEALTHeLINK as a vehicle to access patient data rose 82% in ECMC workgroups collectively in April. This is a result of the efforts and collaboration between ECMC and HEALTHeLINK to ensure that ECMC users had the access, technically and operationally, they needed to get to patient information.



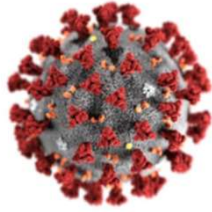
Life Emergencies: Clinical Use Cases for EMS

- **Pre-hospital data.** In many cases, patients aren't admitted to the hospital. An ambulance responds, but patients often declines E.D. treatment. Now that data is available.
- EMS ambulance calls appears in the community patient record patient record.



Total: 78 total EMS Data Sources between Rochester RHIO, HEALTHeLINK and healthconnections

COVID-19 Pandemic



19

COVID-19 Pandemic: 5 Ways to Use HIEs

IDENTIFY AND PRIORITIZE HIGH-RISK INDIVIDUALS
 The two authors said public health officials could leverage HIE data to assemble a list of age-eligible individuals and high-risk individuals. Once identified, officials can contact those individuals to ensure they are vaccinated.

REAL-TIME VACCINATION MONITORING CAMPAIGNS
 Once public health officials assemble the roster of eligible patients, the platform to monitor patient vaccination status in real-time. The HIE, times, and vaccination locations on a single display.

REPORT AND MONITOR POTENTIAL VACCINATION SIDE EFFECTS
 Officials could also leverage the HIE to identify and report any potential side effects.

MANAGE OVERBURDENED MEDICAL FACILITIES
 An HIE platform can assess when a community or population is likely to achieve herd immunity. The platform can evaluate this by having a longitudinal view of patient medical records to see a patient's vaccination status.

The two authors also said HIEs can ensure providers know a patient's medical prior medical status. "Hospitals could use this information to better manage their facilities and strained resources; knowing if an individual poses infection risks would allow facilities to prioritize care provision, determine the need for additional COVID-19 testing, and decide who they must treat in isolated wards," wrote Tarngli and Levin.

INTEGRATING MAJOR DELIVERY NETWORKS, SUCH AS VETERANS AFFAIRS
 The two healthcare professionals noted the majority of HIEs are provider-to-provider networks and cannot provide patients access to their own health information. However, the Veterans Affairs connects patients and beneficiaries through their Blue Button services, they offered as an example.

<https://ehrintelligence.com/news/how-a-health-information-exchange-can-boost-covid-19-vaccination>

COVID-19 Pandemic Support

- Support for several COVID related initiatives:
- ECLRS Data Source
 - Daily Reporting to ECDOH and NYSDOH
 - COVID Test Alerts (Real-time and daily batch)
 - Workgroup participation (NYSDOH/NYeC, WNY Analytics, SHIEC)
 - NYSIS Data Source
 - Vaccination alerts
 - Daily Batch of immunizations administered
 - Weekly files of patients not receiving second dose in prescribed time
 - Monthly files of High-Risk patients without Vaccinations
 - Hospital Alerts of vaccine status on admit



Pandemic: Identify Homebound Individuals

ROCHESTER NEWS WEATHER SPORTS VIDEO CENTER LIFESTYLE COMMUNITY REPORT IT

Denver (AP Photo/David Zatzowski, File)

by: Ally Peters
Posted: May 10, 2021 | 05:54 PM EDT / Updated: May 12, 2021 | 05:17 PM EDT

ROCHESTER, N.Y. (WROC) – A “soft launch” vaccination process has started for homebound individuals in Monroe County.

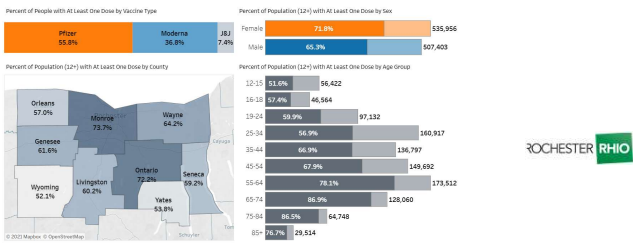
Dr. Alice Loveys, the Finger Lakes COVID-19 Vaccine Hub Homebound Lead, says they identified 500 homebound patients in the county after reaching out to home health care agencies. They then used the Rochester RHIO to check data in the New York State immunization registry to see who had already been vaccinated out of those 500 people.

“It turned out 40% had already been vaccinated, so that’s wonderful,” Dr. Loveys said.

Source: <https://www.rochesterfirst.com/news/vaccinations-begin-for-homebound-individuals-in-monroe-county/>



Pandemic: Finger Lakes Vaccine Hub



COVID Vaccination for Finger Lakes Residents by County | Data Last Updated September 16, 2021
Source: NYSDOH/RHIO vaccine administration data, updated September 16, 2021. Data may differ from NYS summary figures due to different geographic bounds and inclusion criteria. Use the header menus to select a county and measure of interest.
Source: <https://www.fvacctrhub.com/regional-data>





Protecting Downstream Partners

- If you do have a cyber incident, you need to notify your HIE(s) immediately. Depending on the incident, the HIE could disconnect connections to protect community data.
- If any other incident occurs that activates your emergency preparedness plans, you should notify your HIE, so we can provide additional tools.
- HIEs can help with triaging messaging to other data users.
- If a doctor, nurse, or another clinician or care manager leaves a practice, you need to notify your HIE immediately.



Practice the Basics – Ransomware Mitigation

- **Domain separation** – Users' workstations need to be logically separated from production infrastructure
- **Administrators** – Computer administrators need to be given separate credentials for computer and domain administration
- **Education & Training!** – All employees need to be regularly trained to spot suspicious emails, not share passwords



How to Incorporate HIEs into Your Disaster Planning

- HIEs can sit in on tabletop exercises. HIEs conduct their own tabletop exercises on a routine basis.
- Incorporate HIEs into cyber security plans as options during an incident.
- HIEs can provide step-by-step instructions into incorporating into your emergency preparedness and disaster planning.



Wrap-up

Is your health information exchange incorporated in your emergency preparedness plans?



Questions?



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